

**Wind Cave National Park
Northwest Block 4
Prescribed Fire Monitoring Report**

Prepared by Cody Wienk

Burn Unit Summary

The Northwest prescribed fire unit is a 114 acre unit that burned on 4/1/04.

4/1/04

Size: 75 acres burned (the remainder of the unit is prairie dog town and did not burn)

Vegetation Type: Native Mixed Grass Prairie

Personnel:

Burn Boss: Doug Alexander

Ignition Specialist: Eric Allen

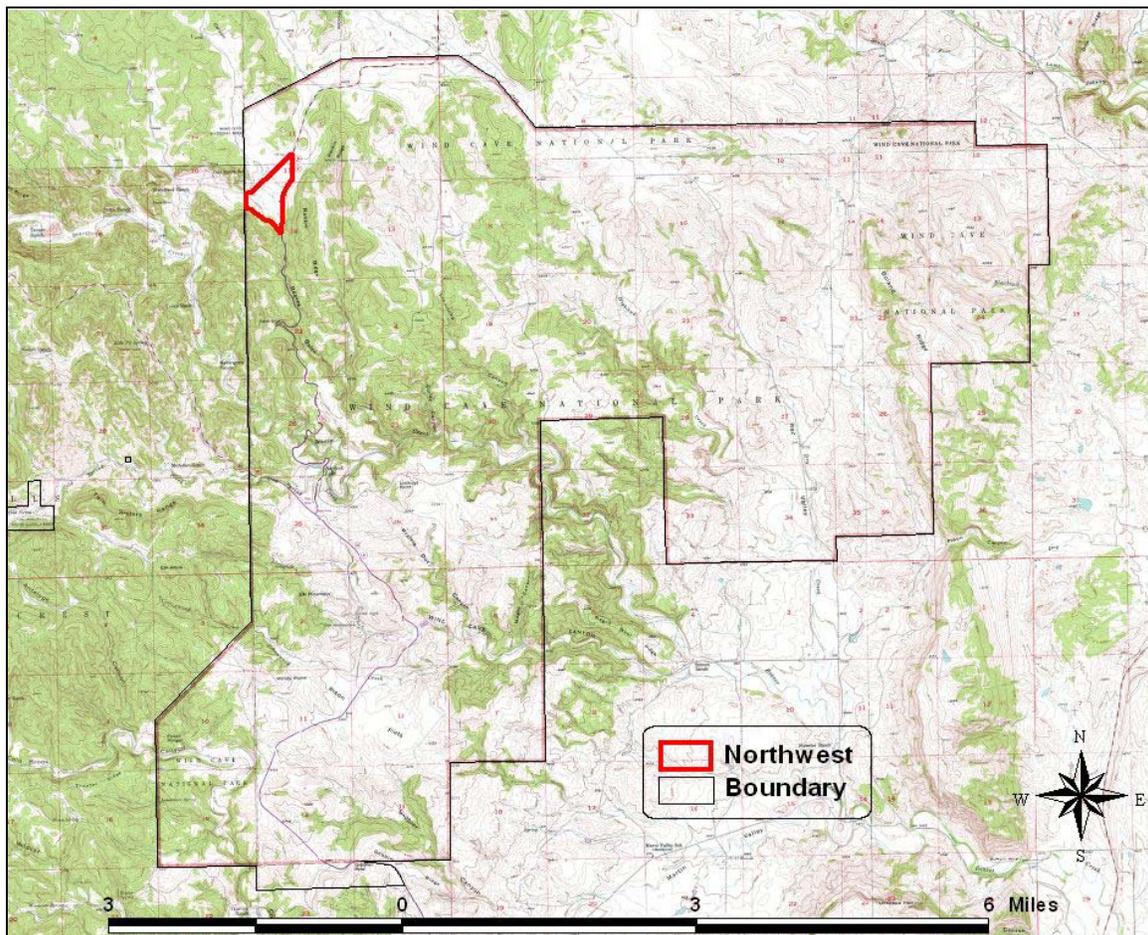
Holding Specialist: Steve Ipswitch

Fire Monitor: Cody Wienk

Engine Bosses: Kevin Merrill, Mark Davison, Sonya Feaster, Steve White

3 Type 6 Engines, 1 Water Tender

3 ATV's



Objectives

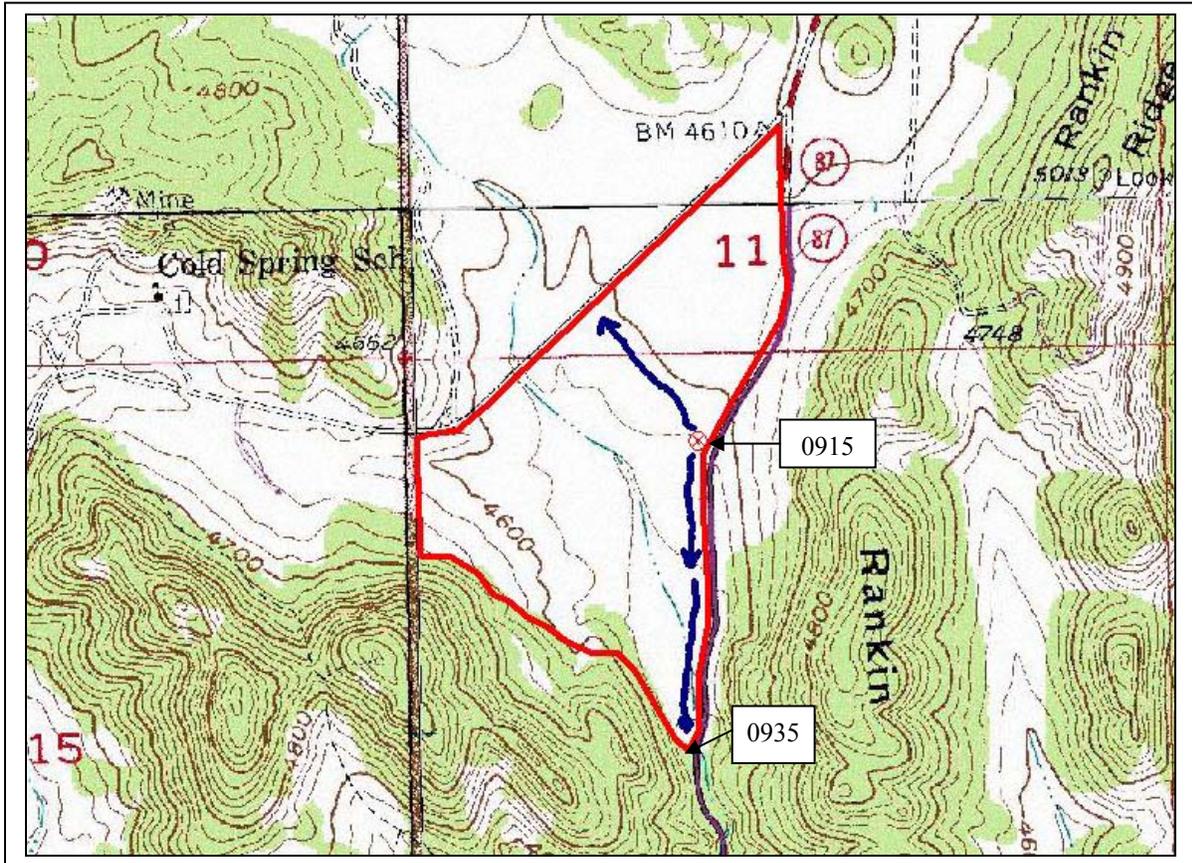
Objectives of the Northwest prescribed fire are as follows:

- Achieve > 85% mortality in ponderosa pine seedlings within 2 years post-burn.

Weather Observations

Time	Temp	RH	Wind	Comments
0825	70	18	SW 3-4	Briefing - 0830
0915	73	13	W 2-3	Test burn - 0915, Burn began 0920
1000	75	23	E 7-8	Wind switch about 0940-0945
1025	76	21	ESE 5-10	
1030			E 8-10	
1145	73	21	ESE 1-2	clear skies
1215	70	24	E 3-5	10% cloud cover
1245	70	24	NE 4-6	10% cloud cover
1315	69	23	NE 2-4	Variable winds, 10% cloud cover
1400	68	25	light & var.	15% cloud cover
1430	69	26	N 4-7	15% cloud cover, treetop winds easterly
1500	71	28	N 3-5	upslope winds, treetop winds easterly
1530	67	31	N 3-5	upslope winds, treetop winds easterly
1615	67	31	N 3-4	25% cloud cover, treetop winds easterly
1700	63	34	NNE 5-7 G10	25% cloud cover
1800	58	46	NNE 5-7	
1900	57	45	NNE 5-8	

Ignition Pattern



A test fire began at 0915 on the eastern side of the unit. From there two ignition teams proceeded north and south bringing backing fire with them as shown in blue on the above map. The ignition team working south reached the southern tip of the unit at approximately 0935. An unpredicted, 180° wind shift at about 0940 caused the fire behavior to change from predominantly backing fire to head fire. The fire then left the west side of the unit and was declared a wildfire at 1038.

Fire Effects Monitoring

Three seedling mortality plots are located within this unit. The plots were established to assess the affects of fire on ponderosa pine seedlings. The immediate post-burn severity measurements showed that the vegetation was moderately burned, or most of the standing vegetation was burned leaving less than 2 inches of stubble. The substrate was scorched to lightly burned, meaning the litter layer was blackened to partially consumed and the duff layer was largely unaffected.

These plots will be read the first growing season after treatment to determine ponderosa pine seedling mortality. Based on immediate post-burn assessments, it appears that ponderosa pine seedling mortality will approach 100% in the three plots (see photos below).

